L4: Entry 17 of 18 File: DWPI Apr 6, 1999

DERWENT-ACC-NO: 1992-316188
DERWENT-WEEK: 199932
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TITLE: Amperometric sensor, partic. for analysis of glucose - has measuring electrode coated with mixt. of specific enzyme and transition metal complex contg. specific ligand as electron transfer mediator

INVENTOR: FRASER, D; FRENKEL, E J ; GRATZEL, M ; RANDIN, J ; ZAKEERUDDIN, S M ; GRAETZEL, M ; ZAKEERUDDIN, S ; FRENKEL, J E ; ZAKEERUDDIN, M S

PATENT-ASSIGNEE:

ASSIGNEE	CODE
ASULAB SA	ASUL

PRIORITY-DATA:
1991FR-0002200 February 21, 1991

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CA 2080840 C	April 6, 1999	N/A	000	C12M001/40
WO 9214836 A1	September 3, 1992	F	040	C12Q001/00
FR 2673289 A1	August 28, 1992	N/A	036	G01N027/327
AU 9212219 A	September 15, 1992	N/A	000	C12Q001/00
FI 9204726 A	October 19, 1992	N/A	000	C12M000/00
EP 526602 A1	February 10, 1993	F	000	C12Q001/00
NO 9204020 A	November 16, 1992	N/A	000	C12Q000/00
CZ 9203165 A3	April 14, 1993	N/A	000	G01N027/327
JP 05506102 W	September 2, 1993	N/A	010	G01N027/327
HU 66200 T	October 28, 1994	N/A	000	C12Q001/00
US 5378628 A	January 3, 1995	N/A	018	G01N027/26
AU 656360 B	February 2, 1995	N/A	000	G01N027/413
SK 9203165 A3	April 12, 1995	N/A	000	G01N027/327
EP 526602 B1	January 2, 1997	F	024	C12Q001/00
DE 69216319 E	February 13, 1997	N/A	000	C12Q001/00
HU 212451 B	June 28, 1996	N/A	000	C12Q001/00
JP 2770250 B2	June 25, 1998	N/A	015	G01N027/327

DESIGNATED-STATES: AU BG CA CS FI HU JP KR NO PL RO RU US AT BE CH DE DK ES FR GB GR IT LU MC NL SE AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE

CITED-DOCUMENTS:5.Jnl.Ref; EP 96288 ; JP62228274 ; WO 8505119

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
CA 2080840C	February 19, 1992	1992CA-2080840	N/A
WO 9214836A1	February 19, 1992	1992WO-CH00034	N/A
FR 2673289A1	February 21, 1991	1991FR-0002200	N/A
AU 9212219A	February 19, 1992	1992AU-0012219	N/A
AU 9212219A	February 19, 1992	1992WO-CH00034	N/A
AU 9212219A	N/A	WO 9214836	Based on
FI 9204726A	February 19, 1992	1992WO-CH00034	N/A
FI 9204726A	October 19, 1992	1992FI-0004726	N/A
EP 526602A1	February 19, 1992	1992EP-0903775	N/A
EP 526602A1	February 19, 1992	1992WO-CH00034	N/A
EP 526602A1	N/A	WO 9214836	Based on
NO 9204020A	February 19, 1992	1992WO-CH00034	N/A
NO 9204020A	October 16, 1992	1992NO-0004020	N/A
CZ 9203165A3	October 19, 1992	1992CS-0003165	N/A
JP05506102W	February 19, 1992	1992JP-0503902	N/A
JP05506102W	February 19, 1992	1992WO-CH00034	N/A
JP05506102W	N/A	WO 9214836	Based on
HU 66200T	October 19, 1992	1992HU-0003285	N/A
HU 66200T	October 19, 1992	1992WO-CH00034	N/A
HU 66200T	N/A	WO 9214836	Based on
US 5378628A	February 19, 1992	1992WO-CH00034	N/A
US 5378628A	October 19, 1992	1992US-0938219	N/A
US 5378628A	N/A	WO 9214836	Based on
AU 656360B	February 19, 1992	1992AU-0012219	N/A
AU 656360B	N/A	AU 9212219	Previous Publ.
AU 656360B	N/A	WO 9214836	Based on
SK 9203165A3	February 19, 1992	1992CS-0003165	N/A
SK 9203165A3	N/A	1992WO-CH00034	N/A
EP 526602B1	February 19, 1992	1992EP-0903775	N/A
EP 526602B1	February 19, 1992	1992WO-CH00034	N/A
EP 526602B1	N/A	WO 9214836	Based on
DE69216319E	February 19, 1992	1992DE-0616319	N/A
DE69216319E	February 19, 1992	1992EP-0903775	N/A
DE69216319E	February 19, 1992	1992WO-CH00034	N/A
DE69216319E	N/A	EP 526602	Based on
DE69216319E	N/A	WO 9214836	Based on
HU 212451B	February 19, 1992	1992HU-0003285	N/A
HU 212451B	February 19, 1992	1992WO-CH00034	N/A
HU 212451B	N/A	HU 66200	Previous Publ.
HU 212451B	N/A	WO 9214836	Based on
JP 2770250B2	February 19, 1992	1992JP-0503902	N/A
JP 2770250B2	February 19, 1992	1992WO-CH00034	N/A
JP 2770250B2	N/A	JP 5506102	Previous Publ.
JP 2770250B2	N/A	WO 9214836	Based on

2770250 B2 INT-CL (IPC): A61B 5/14; C12M 0/00; C12M 1/40; C12Q 0/00; C12Q 1/00; C12Q 1/54; G01N 27/26; G01N 27/28; G01N 27/327; G01N 27/413; G01N 27/416; G01N 31/00; G01N 33/483; G01N 33/66

ABSTRACTED-PUB-NO: EP 526602B
BASIC-ABSTRACT:

Sensor comprises at least one measuring electrode (ME) and a reference electrode (RE), isolated from each other; and placed in contact with the sample. The electrodes include contacts for connection to a device which processes the signal from the sensor. ME contains at least one current collector, connected to one of the contacts, which is covered by a mixt. of at least one oxido-reductase enzyme specific for (A) and at least one mediator (ETm) of electron transfer enzyme and current collector. ETm is a transition metal complex having at least one bipyridine, terpyridine or phenaanthroline ligand substd. by at least one electron-donating gp.

Also new is an assembly contg. such a sensor and a signal-processing unit consisting of electrical contacts (to connect ME and RE) an ammeter and a system for displaying the result.

The mixt. of enzyme and ETm pref. also includes an active conductive material (ACm) and ETm transfers electrons between enzyme and ACm.

USE/ADVANTAGE - Esp. used for amperometric measurement of glucose in clinical samples, esp. for monitoring the status of diabetics, using either in vitro or (when implanted) in vivo measurements. The sensors can provide a wide range of low redox potentials, are stable in air and provide a more rapid response than known sensors.

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ABSTRACTED-PUB-NO:

US 5378628A
EQUIVALENT-ABSTRACTS:

Sensor for measuring the amount of a component in a solution comprising: at least one measuring electrode (20) and one reference electrode (22) insulated from one another and adapted to come into contact with said solution, said electrodes (20,22) comprising respectively electrical contacts (34; 26) adapted to be connected to a device (4) for processing the signal supplied by said sensor, the measuring electrode (20) comprising at least one current collector (37) electrically connected to one of the electrical contacts (34) and coated with a mixture (38) comprising at leat one oxidation-reduction enzyme specific to said component and at least one mediator transferring the electrons between said enzyme and said current collector, characterize d in that the mediator is chosen from among the complexes of osmium with bipyridine ligands substituted by at least one electron donor group selected hydroxy, alkoxy, aryloxy or primary, secondary or tertiary amine groups.

Sensor for the determination of a redox enzyme substrate comprises an electrical conductor coated with a redox enzyme, pref. glucose oxidase, and one or more electron-transfer mediators, pref. tris-(4,4'-dim ethoxy-2,2'- bipyridyl)osmium or bis-(4,4'-dimethoxy-2,2'-bipyridyl)- mono-(4,4'-dimethyl-2,2' bipyridyl)osmium, dispersed with a conducting carrier and binder.